

**REMARKS**

**Status of Claims**

Claims 1-4, 7 and 10-12 are all the claims pending in the application, of which 7 and 10-12 are withdrawn from consideration as being directed to non-elected inventions. Claims 1-4 are rejected.

**Claim to Priority**

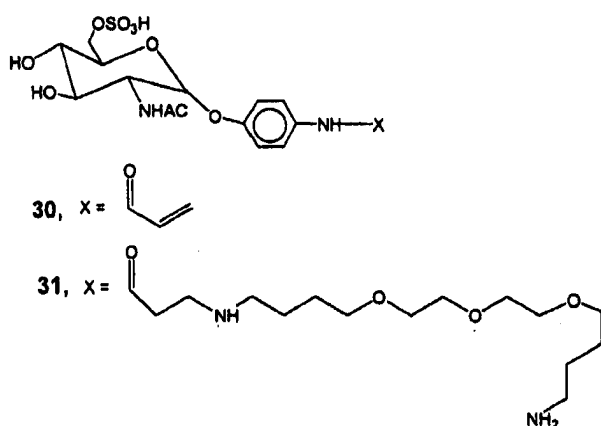
Applicants thank the Examiner that Applicants' claim to priority and receipt of all the priority documents from the International Bureau have been acknowledged.

**Withdrawn Rejections**

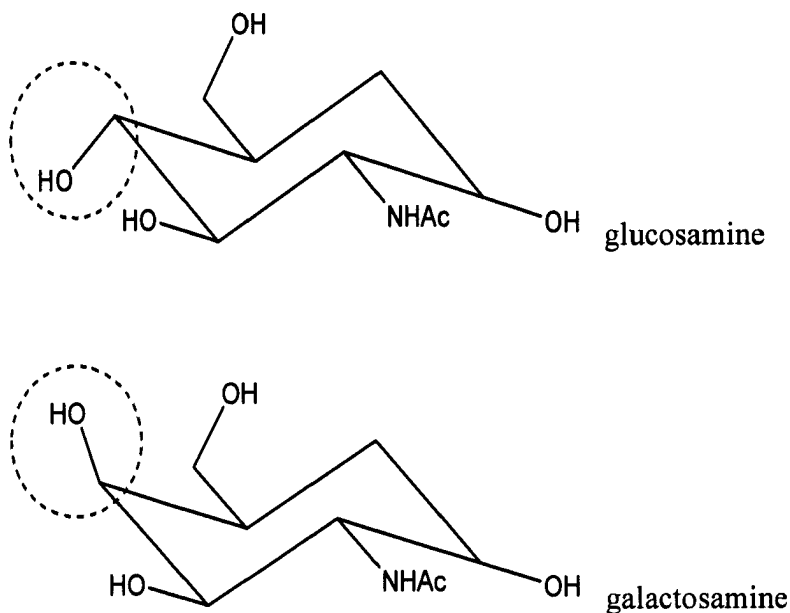
Applicants thank the Examiner for withdrawal of the rejections of claims 1-4 under 35 U.S.C. § 112, second paragraph and 35 U.S.C. § 102 over Habuchi and/or Dahlgren.

**Rejection of Claims 1 and 2 Under 35 U.S.C. § 102, for Anticipation**

On page 3 of the Office Action, Claims 1 and 2 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Aebersold *et al.* (WO 00/11208, published March 2, 2000) ("Aebersold"). The Office alleges that the compounds 30 and 31 shown on page 89 of Aebersold anticipates the compound of claims 1 and 2 of the present application.



Applicants respectfully disagree. It appears to Applicants that the Office is confused glucosamine with galactosamine. The glucosamine compounds taught by Aebersold have a different structure from the galactosamine compounds of the presently claimed invention, as can be seen below.

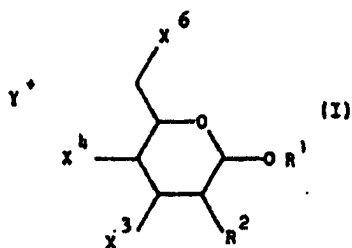


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**Rejection of Claims 1-4 Under 35 U.S.C. § 103, for Obviousness**

On page 4 of the Office Action, Claims 1-4 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Dahlgren, *et al.* (WO 97/00879, published January 9, 1997) ("Dahlgren"), in view of Greene *et al.* (*Protective Groups in Organic Synthesis*, Third Edition, John Wiley & Sons, Inc. published 1999) ("Green").

It appears to Applicants that the Office alleges that Dahlgren discloses compounds of the following formula (I):



wherein X<sup>3</sup>, X<sup>4</sup> and X<sup>6</sup> can all be OH or SO<sub>4</sub><sup>-</sup>, R<sup>2</sup> can be OH, SO<sub>4</sub><sup>-</sup> or substituted amine including NHAc, and R<sup>1</sup> can be hydrogen, alkyl, benzyl, amino acid, nucleotide or polypeptide. However, the Office acknowledges that Dahlgren fails to disclose compounds wherein the substituent at the R<sup>1</sup> (R<sub>4</sub> in claim 1) position is an aryl group other than benzyl.

In an attempt to rectify this deficiency, the Office relies upon Greene, which allegedly discloses the use of 2-, 4-picolyl ethers and 1-pyrenylmethyl ether as protecting groups for the hydroxyl group. The Office acknowledges that these protecting groups are introduced using the chloride moiety, and can be subsequently removed by methods used for benzyl ether cleavage. The Office asserts that it would have been obvious to one of ordinary skill in the art to prepare the compounds of Dahlgren using aryl protecting groups other than benzyl, such as a picolyl ether or a 1-pyrenylmethyl ether, as disclosed by Greene, and that one of ordinary skill in the art

could have substituted one protecting group for another, and have predicted that the alternative protecting groups would be effective because of their ease of introduction and removal.

Applicants respectfully traverse the rejection.

The sole rationale set forth by the Office for combining these references is that one of ordinary skill in the art would have predicted that the use of aryl protecting groups other than benzyl would be effective in protecting hydroxyl groups because of their “ease of introduction and removal.”

In every example proffered by Dahlgren, the benzyl moiety at R<sub>4</sub> is initially used as a protectant group for the hydroxyl moiety, however, this benzyl group is ultimately removed by catalytic hydrogenation to produce the final reaction product. Indeed, on page 4 of the Office Action, the Office states that “the compounds were formed by benzylation followed by treatment with sulfur trioxide-triethylamine complex, followed by hydrogenation to remove the benzyl group.” The Office continues to allege that “these [protecting groups] can be introduced easily via the corresponding chlorides and can be removed by hydrogenation, which is compatible with the synthesis of Dahlgren *et al.*” Accordingly, every final reaction product disclosed by Dahlgren has undergone catalytic hydrogenation to remove the benzyl moiety at the R<sub>4</sub> group, and therefore, the compounds disclosed by Dahlgren, which are referred to by the Office, are merely intermediate compounds in the production of final reaction products.

In this regard, pursuant to MPEP § 2144.09, “if the prior art does not teach any specific or significant utility for the disclosed compounds, then the prior art is not sufficient to render structurally similar claims *prima facie* obvious because there is not motivation for one of ordinary skill in the art to make the reference compounds, much less any structurally related compounds.” Dahlgren fails to disclose any specific or significant utility for the intermediate

compounds containing a benzyl moiety. Thus, even if one of ordinary skill in the art were to use other protecting groups, as suggested by the Office, there is no suggestion within the references, why it would be obvious to terminate the reaction before removal of the protecting group.

Therefore, it is believed that the rejection is not sustainable and Applicants respectfully request the rejection be withdrawn.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Sunhee Lee  
Registration No. 53,892

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON DC SUGHRUE/265550

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